

ABSTRACT OF THE DISCLOSURE

The present invention provides a method of identifying a defect in a part by forming a dot product between a vector related to a part with a known defect and a vector related to a part with an unknown defect. The magnitude of the dot product has been found to increase as the likelihood that unknown defect is the know defect increases. The components of each of these vectors determined from a quantifiable physical property capable of discriminating between parts with and without defects. The most useful quantifiable physical property for the method of the invention is the magnitudes of vibrations in an operating part. Frequency spectrum generated with this property are easily analyzed and defects identified. The present invention provides another method of identifying defects that is readily applicable to time domain spectra also uses dot product but shifts the vector to maximize the dot product.